Technology Business Management and the IT Service Catalog

A Higher Education Crosswalk

EDUCAUSE WORKING GROUP PAPER

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Table of Contents

Technology business management (TBM) is a critical capability that provides IT leaders with standards and best practices to communicate the cost, quality, and value of IT investments to their institutional partners. This document provides a crosswalk between the EDUCAUSE Higher Education IT Service Catalog and the standard TBM Taxonomy to create a common categorization of service areas for comparison and benchmarking.

Introduction

Technology business management (TBM) is a critical capability that provides IT leaders with standards and best practices to communicate the cost, quality, and value of IT investments to their institutional partners. Although higher education is beginning to adopt the TBM practice, the standard TBM Taxonomy used to promote alignment between IT, finance, and business unit leaders in various industries did not take into account the unique characteristics of the higher education enterprise.

In 2019, a group of higher education IT financial and IT service management professionals expressed interest in developing a TBM Taxonomy extension for higher education that could be mapped to the EDUCAUSE IT Service Catalog in order to ensure common definitions to help with comparison and benchmarking financial data and metrics. As a result of those early conversations, an EDUCAUSE working group was formed to align the two perspectives and create the basis for a TBM Taxonomy extension for higher education, with an intent to see this ratified by the TBM Council in 2020. This paper is the result of that effort.

Using the EDUCAUSE IT Service Catalog as a basis, the working group mapped the service categories and service areas to the standard TBM Taxonomy, reviewing definitions and identifying proper TBM categorization and identifying the need to add new categories to create a higher education extension of the TBM Taxonomy. The crosswalk effort creates common categorization of service areas for comparison and benchmarking within TBM solutions and potentially with the EDUCAUSE Core Data Service.

The IT Service Catalog and TBM Taxonomy Structures

EDUCAUSE published a revision of the working group paper *The Higher Education IT Service Catalog: A Working Model for Comparison and Collaboration* in November 2019 (first publication took place in April 2015). The paper provides specific guidance regarding the necessary components of an effective IT service catalog, such as the taxonomy, terminology, attributes, and descriptions for common IT services. The revision addresses the rapidly changing landscape of information technology and uses feedback from earlier implementations to address gaps in and needed changes to the first edition.

Technology business management (TBM) is a value-management framework instituted by CIOs, CTOs, and other technology leaders and governed by an independent council board, the TBM Council. The TBM Taxonomy promotes alignment between IT, finance, and business unit leaders and provides the ability to compare technologies and services to those of peers and to third-party options (e.g., public cloud). It has been adopted throughout the private sector, the federal government, and a few colleges and universities. Acknowledging the differing needs of specific industry groups while maintaining the overarching integrity of a standardized way of describing and allocating costs to services, the TBM Council provides advice and guidance on creating industry-specific extensions to the main taxonomy through the use of collaborative working groups. In recent years, banking/finance, insurance, health care, energy, manufacturing, and U.S. Federal Government working groups have all been established to work on extending the taxonomy to better suit the spectrum of business services offered in those sectors.

The following provides a brief overview of the TBM Taxonomy and the IT service catalog to better share how these are organized and therefore how the crosswalk was created.

The EDUCAUSE Higher Education IT Service Catalog

The implementation of a service catalog is an important step in transforming from a technology-oriented organization into a service-oriented organization, enabling the organizational focus to shift from technology components to services that facilitate institutional outcomes. It is a vehicle used to communicate and provide clarity to constituents about the IT services available to them, to help improve customer relations by sharing information and setting expectations, and

to improve service portfolio planning so IT investments and activities better align with institutional needs. The number of colleges and universities offering a service catalog has grown, but for those just starting work in this area, developing a catalog can be a lengthy and difficult process. The EDUCAUSE higher education IT service catalog comprises three tiers, with a fourth section defining key attributes for services and service offerings (see figure 1).

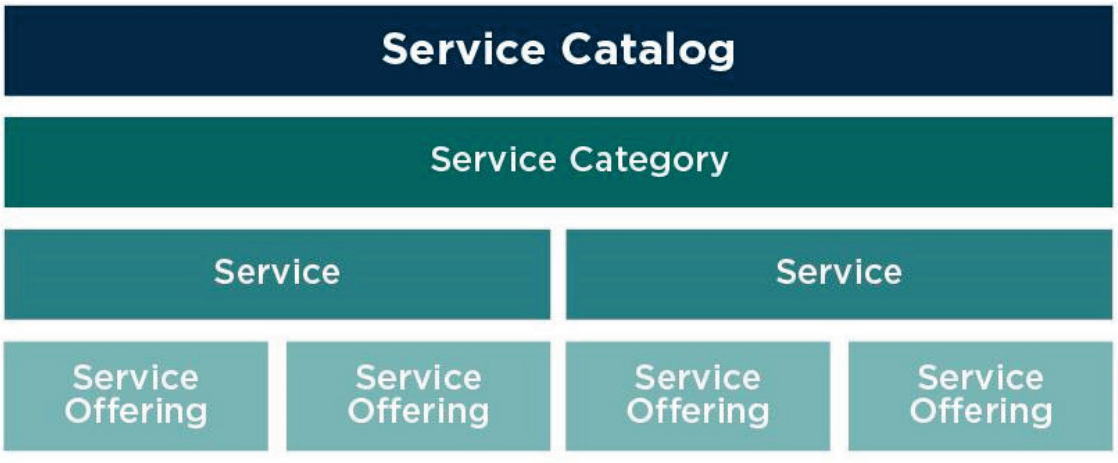

Figure 1. Higher education IT service catalog model

The components of the catalog are defined as follows:

- **Service Category:** A high-level grouping of services that benefit from being managed together.
- **Service:** An end-to-end IT service that delivers value to customers, typically not identified by specific product or application names. Multiple related services are grouped in a service category.
- **Service Offering:** The specific technology-focused activity or product used to deliver a service. Multiple service offerings may exist for a single service.
- **Service Attributes:** Key information about individual services or service offerings (e.g., service name, service description, and audience).

The TBM Taxonomy

TBM, at its core, is a methodology for financial accounting, tracing all the financial investments of an IT organization in providing services to a client

community. TBM gives technology leaders and their business partners the facts they need to collaborate on business-aligned decisions. To gain alignment between IT, finance, and business unit or management center leaders, TBM provides a standard taxonomy to describe cost sources, technologies, IT resources (IT towers), applications, and services. A simple view of the TBM Taxonomy is shown in figure 2 below. Any cost pool of funds could be invested in any number of categories of IT towers, as TBM does not dictate alignment of cost pool categories to IT towers. It is important to recognize that IT towers are classified as raw investments, without designated purpose. Purpose for an investment is established by associating the elements of IT towers to the categorized products and services an organization provides, represented in strata above the IT towers.

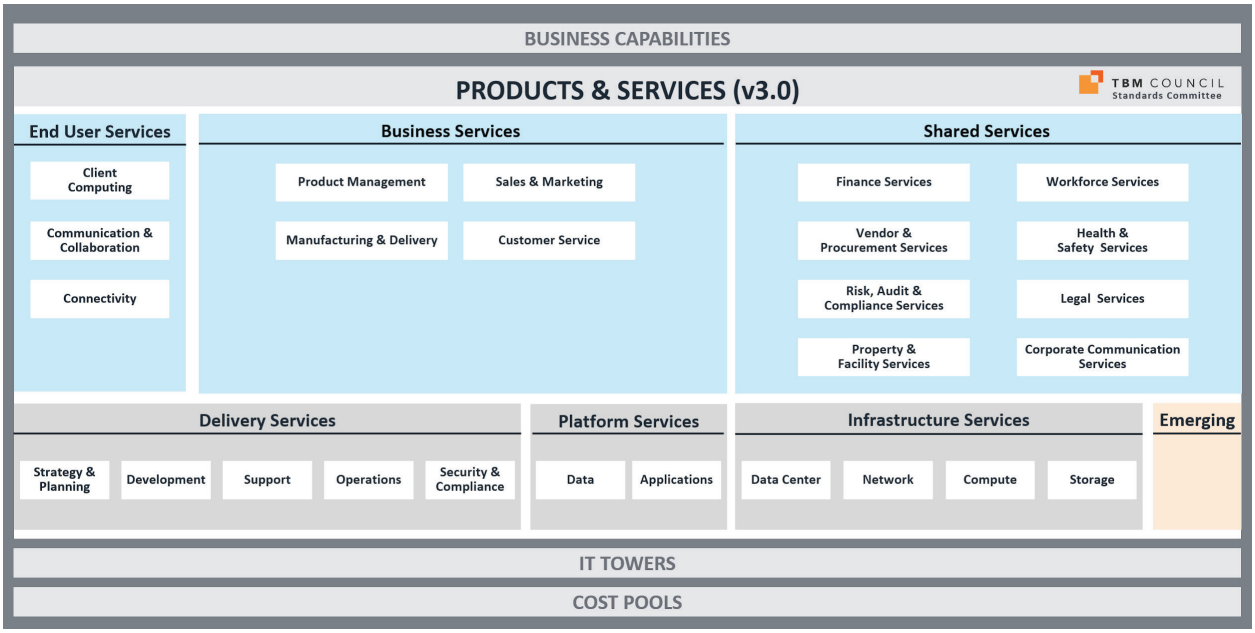

Figure 2. TBM Taxonomy

For the purposes of this crosswalk, the working group focused on the Products and Services tier of the TBM Taxonomy. This portion of the hierarchy is grouped by service type (e.g., end-user services, platform services), service category (e.g., client computing, communication and collaboration), and service name. Service offerings, as shown below in figure 3, would be specific to the organization and are included in the TBM Taxonomy as representative examples.

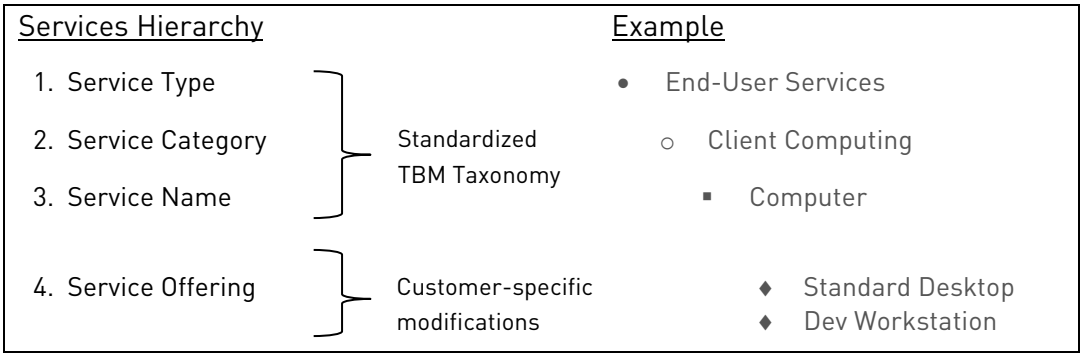

Figure 3. TBM services hierarchy

To clarify how the terminology in each differs, see table 1.

Table 1. Service catalog versus TBM Taxonomy hierarchy

IT Service Catalog Hierarchy	TBM Service Hierarchy	Description
N/A	Service Type	Division of services into six types: business, end-user, delivery, infrastructure, platform, and shared services.
Service Category	Service Category	A grouping of services that benefit from being managed together.
Service	Service Name	An end-to-end IT service, typically not identified by specific product or application names. Multiple related services are grouped in a service category.
Service Offering	Service Offering	The specific technology-focused activity or product used to deliver a service. Multiple service offerings may exist for a single service.

This crosswalk aligns the key attributes of the EDUCAUSE IT Service Catalog with the TBM taxonomy's Products and Services tier, thus enabling the ability to benchmark and compare costs and other metrics that are meaningful to finance, IT, and business professionals.

The EDUCAUSE IT Service Catalog TBM Taxonomy Crosswalk

The crosswalk helps institution that are using the EDUCAUSE Higher Education IT Service Catalog slip it into the TBM Taxonomy. This allows institutions to benefit from the power of the TBM Taxonomy and the translation of costs between cost pools, towers, and services without significant effort or change to current service management program/processes.

The crosswalk outlined below is a detailed mapping of EDUCAUSE IT Service Catalog services to TBM Taxonomy service names. Bolded TBM service categories or names indicate proposed new areas for the TBM Taxonomy, to be included in a higher education extension. Three new service categories are being proposed to the TBM Council Standards Board to align with EDUCAUSE IT Service Catalog categories: Administrative and Business, Research, and Teaching and Learning. Each of these will be classified under the service type Business Services.

In some cases the EDUCAUSE Service Catalog service might map to more than one service name in the TBM Taxonomy. In those cases, select the item that best fits your organizational structure. The left column indicates the service categories and services; the right column indicates where the services align to the TBM Taxonomy, listing the Service Type, Service Category, and Service Name as such:

- Service Type
  - Service Category
    - Service Name

See figure 4 following the crosswalk table to see how these would be incorporated into the TBM Taxonomy.

EDUCAUSE IT Service Catalog Categories and Services	TBM Taxonomy
Administrative and Business	
Alumni and Advancement	• Business Services ○ **Administrative and Business** ▪ **Alumni and Advancement**
Athletics	• Business Services ○ **Administrative and Business** ▪ **Athletics**
Auxiliary Systems	• Business Services ○ **Administrative and Business** ▪ **Auxiliary Systems**
Business Capability and Process Automation	• Business Services ○ **Administrative and Business** ▪ **Business Capability and Process Automation**
Data, Reporting, and Analytics	• Business Services ○ **Administrative and Business** ▪ **Data, Reporting, and Analytics**
Facilities Management	• Shared Services ○ Property and Facility Services ▪ Facilities Management

Faculty Information Systems	• Business Services
	  ○ **Administrative and Business**
	  ▪ **Faculty Information Systems**

Financial and Procurement Systems	• Shared Services
	  ○ Finance Services
	  ▪ Financial and Procurement Systems

Human Resource Systems	• Shared Services
	  ○ Workforce Services
	  ▪ Human Resource Systems

Library Systems	• Business Services
	  ○ **Administrative and Business**
	  ▪ **Library Systems**

Medical and Health Systems	• Business Services
	  ○ **Administrative and Business**
	  ▪ **Medical and Health Systems**

Student Information Systems	• Business Services
	  ○ **Administrative and Business**
	  ▪ **Student Information Systems**

Communication and Collaboration	

Conferencing and Telephones	• End-User Services
	  ○ Communication and Collaboration
	  ▪ Communication

Email and Collaboration Services	• End-User Services
	  ○ Communication and Collaboration
	  ▪ Collaboration

Mass Communications and Emergency Notifications	• End-User Services
	  ○ Communication and Collaboration
	  ▪ Communication

Media and A/V	• End-User Services
	  ○ Communication and Collaboration
	  ▪ Productivity

Web Services	• End-User Services
	  ○ Communication and Collaboration
	  ▪ Productivity

Desktop and Mobile Computing	

Desktop and Mobile Device Support	• End-User Services
	  ○ Client Computing
	  ▪ Computer
	  ▪ Bring Your Own Device

Hardware Lifecycle Services	• End-User Services
	  ○ Client Computing
	  ▪ Computer

Printing and Related Services	• End-User Services
	  ○ Communication and Collaboration
	  ▪ Print

Software and Applications Distribution	• End-User Services
	  ○ Communication and Collaboration
	  ▪ Productivity

Infrastructure	

Business Continuity and Disaster Recovery	• Delivery Services
	  ○ Security and Compliance
	  ▪ Business Continuity and Disaster Recovery

Data Center Services	• Infrastructure Services
	  ○ Compute
	  ▪ Compute on Demand
	  ○ Data Center
	  ▪ Enterprise Data Center
	  ▪ Other Data Center

Database Management	• Platform Services
	  ○ Data
	  ▪ Database

Integration Services	• Delivery Services
	  ○ Development
	  ▪ System integration

Monitoring and Alert Management	• Delivery Services
	  ○ Operations
	  ▪ Event Management

Network and Connectivity Management	• Infrastructure Services
	  ○ Network
	  ▪ Data Network

Server and Storage Management	• Infrastructure Services
	  ○ Storage Services
	  ▪ Backup and Archive
	  ▪ Distributed Storage (CDN)
	  ▪ File and Object Storage
	  ▪ Networked Storage
	  ○ Compute
	  ▪ Compute on Demand
	  ▪ Mainframe
	  ▪ Physical Compute
	  ▪ Virtual Compute and Containers

IT Professional Services	

Continuous Improvement and Innovation	• Delivery Services
	  ○ Strategy and Planning
	  ▪ Business Solution Consulting

Digital Accessibility	• Delivery Services
	  ○ Support
	  ▪ Application Support

IT Communications and Documentation	• Delivery Services
	  ○ Support
	  ▪ IT Training

IT Service Delivery and Support	• Delivery Services
	  ○ Support
	  ▪ Service Desk

IT Strategy, Governance, and Enterprise Architecture	• Delivery Services
	  ○ Strategy and Planning
	  ▪ Technology Business Management
	  ▪ Program, Product, and Project Management
	  ▪ Enterprise Architecture

Portfolio and Project Management	• Delivery Services
	  ○ Strategy and Planning
	  ▪ Technology Business Management
	  ▪ Program, Product, and Project Management

Training and Outreach	• Delivery Services
	  ○ Support
	  ▪ IT Training

Information Security	

Identity and Access Management	• Delivery Services
	  ○ Security and Compliance
	  ▪ Identity and Access Management

Secure Computing	• Delivery Services
	  ○ Security and Compliance
	  ▪ Data Privacy and Security

Security Consulting and Education	• Delivery Services
	  ○ Security and Compliance
	  ▪ Security Awareness

Security Incident Response and Investigation	• Delivery Services
	  ○ Security and Compliance
	  ▪ Cyber Security and Incident Response

Security Policy and Compliance	• Delivery Services
	  ○ Security and Compliance
	  ▪ Governance, Risk, and Compliance

Research	
Lab Management Systems	• Business Services ○ **Research** ▪ **Lab Management Systems**
Research Administration Systems	• Business Services ○ **Research** ▪ **Research Administration Systems**
Research-Specific Computing and Applications	• Business Services ○ **Research** ▪ **Research-Specific Computing and Applications**
Research Data Services	• Business Services ○ **Research** ▪ **Research Data Services**
Research Software	• Business Services ○ **Research** ▪ **Research Software**
Teaching and Learning	
Assessment Systems and Learning Analytics	• Business Services ○ **Teaching and Learning** ▪ **Assessment Systems and Learning Analytics**
Academic Technology and Support	• Business Services ○ **Teaching and Learning** ▪ **Academic Technology and Support**
E-Portfolio Management	• Business Services ○ **Teaching and Learning** ▪ **E-Portfolio Management**
Instructional Technology and Design	• Business Services ○ **Teaching and Learning** ▪ **Instructional Technology and Design**
Learning Management	• Business Services ○ **Teaching and Learning** ▪ **Learning Management**
Lecture Capture	• Business Services ○ **Teaching and Learning** ▪ **Lecture Capture**
Polling and Surveys	• Business Services ○ **Teaching and Learning** ▪ **Polling and Surveys**

Figure 4 provides a visual overview of the TBM Taxonomy service categories and names where IT service catalog services align, as well as where proposed new categories and their associated services would be incorporated.

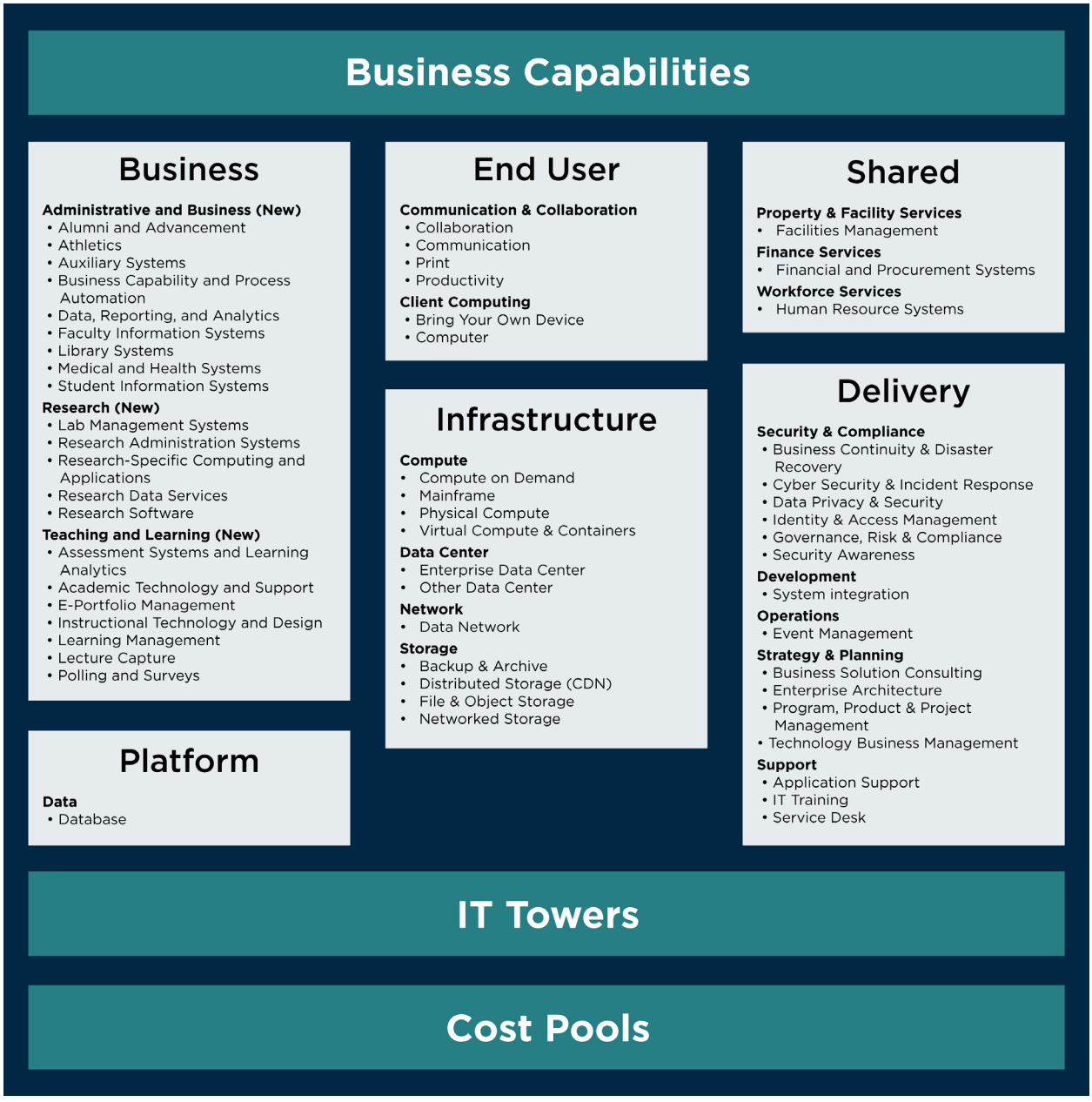

Figure 4. How the service categories map to the TBM Taxonomy

Conclusion

The crosswalk presented here is based on industry standards and best practices as originally established in the EDUCAUSE Higher Education IT Service Catalog and the TBM Taxonomy. Within an institution, using this crosswalk will improve consistency in the terminology and transparency of IT services. If adopted throughout higher education, a standard taxonomy will enable and improve consistent benchmarking across institutions. In addition, this capability will allow service owners to compare financial service performance that could help with benchmarking, identifying robust services, and determining which services might need to be retired. Finally, as a result of this work, a formal request has been made to the TBM Council for a higher education–specific taxonomy extension. The TBM Council has provided a working space on its TBM connect website to outline the service categories that are outside the bounds of the standard TBM Taxonomy and describe why they are unique to higher education. We will also highlight where in the TBM Taxonomy the EDUCAUSE service catalog items reside.

Ultimately, we hope that the crosswalk will also facilitate and ease the compilation of Core Data Service financial input by participating institutions. If the CDS asks for expenditures by EDUCAUSE Service Catalog terminology, we will be able to group costs from TBM Service Categories without extensive redistribution. There might also be an opportunity to automate reports to generate CDS financial data. There will also be added assurance that we are benchmarking comparable data.

The value that using the crosswalk brings to an institution will vary depending on the maturity of its IT Financial Management (ITFM)[1] discipline and reporting. The optimal approach to using this crosswalk begins with the institution's financial chart of accounts. If possible, through the chart of accounts, each financial transaction should be tagged with "what" is being purchased as well as the "why" (e.g., the Products and Services layer). From this foundation, IT expenses can be captured and reported up to the delivered product or service level.

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Note

1. The goal of IT Financial Management is to optimize the cost of IT services while taking into account quality and risk factors.

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